WHAT IS CLAIMED IS:

1. An optical connector for connecting an input optical component to an output optical component, comprising:

a three-dimensional optically-transmissive bulk dielectric for abutment with an input connection face of the input optical component and an output connection face of the output optical component; and

a connection path written within the three-dimensional bulk dielectric for connecting the input connection face to the output connection face.

2. The optical connector of claim 1, wherein the three-dimensional bulk dielectric is a glass block.

3. The optical connector of claim 1, wherein the three-dimensional bulk dielectric is a prism.

4. The optical connector of claim 1, wherein the connection path is a waveguide.

5. The optical connector of claim 4, wherein the waveguide is formed by localized modification of the refractive index of the bulk dielectric.

6. The optical connector of claim 4, wherein the waveguide is profiled to minimize transmission losses at the input and output connection faces.

7. The optical connector of claim 1, wherein the connection path is a straight through path.

8. The optical connector of claim 1, wherein the connection path is a bent.

9. The optical connector of claim 8, wherein the bent connection path is a bent waveguide.

10. The optical connector of claim 9, wherein bent waveguide is profiled to minimize transmission losses at a bend.

11. The optical connector of claim 8, wherein the bent connection path includes two substantially orthogonal waveguides disposed within the bulk dielectric to permit total internal reflection from one of the two waveguides to the other.

12. The optical connector of claim 11, wherein the two waveguides intersect at a polished surface of the bulk dielectric.

13. The optical connector of claim 8, wherein the bent connection path includes two substantially orthogonal waveguides interconnected by a photonic crystal structure.

14. The optical connector of claim 1, having a plurality of connection paths written within the bulk dielectric for connecting an array of discrete input optical components to an array of discrete output optical components.

15. A stacked optical connector assembly, comprising a plurality of optical connectors according to claim 14 stacked to form the connector assembly.

16. A method of manufacturing an optical connector for connecting a first optical component to a second optical component, comprising steps of:

locating a first optical connection point, for connection to the first optical component, on a first surface of a three-dimensional optically-transmissive bulk dielectric workpiece;

writing a connection path within the workpiece from the first optical component connection point to a second optical component connection point, for connection to the second optical component, on a second surface of the workpiece.

17. The method of claim 16, wherein the step of locating includes imaging the first optical connection point at an imaging detector.

18. The method of claim 17, wherein the step of locating includes detecting an image of maximum brightness and focus at the imaging detector.

19. The method of claim 16, wherein step of writing includes selectively modifying the refractive index of the workpiece.

20. The method of claim 16, wherein the step of writing includes translating the workpiece relative to a writing means.

21. The method of claim 16, wherein the step of writing includes femtosecond laser dielectric modification.

22. The method of claim 16, wherein the steps of locating and writing are repeated to provide connection paths between a plurality of discrete optical components in first and second optical component arrays.

23. An apparatus for manufacturing an optical connector for connecting a first optical component to a second optical component, comprising:

means for locating a first optical connection point, for connection to the first optical component, on a surface of a three-dimensional optically-transmissive bulk dielectric workpiece;

a laser system for modifying the workpiece in three-dimensions to provide an optical connection path within the workpiece for connecting the first optical connection point to a second optical connection point, for connection to the second optical component, on a second surface of the workpiece.

24. The apparatus of claim 23, wherein the means for locating includes an imaging system for detecting an image of the first optical connection point.

25. The apparatus of claim 23, wherein the laser system is a femtosecond laser dielectric modification system.

26. The apparatus of claim 25, including two orthogonal imaging systems for writing the connection path in a transverse mode.

27. A customizable optical circuit, comprising:

a plurality of optical components mounted on a wafer; and

a plurality of selectively activatable connection paths for selectively connecting the optical components to provide a customized optical function.

28. The customizable optical circuit of claim 27, wherein the plurality of selectively activatable connection paths are written within three-dimensional optically-transmissive bulk dielectric blocks abutting connection faces of the plurality of optical components.